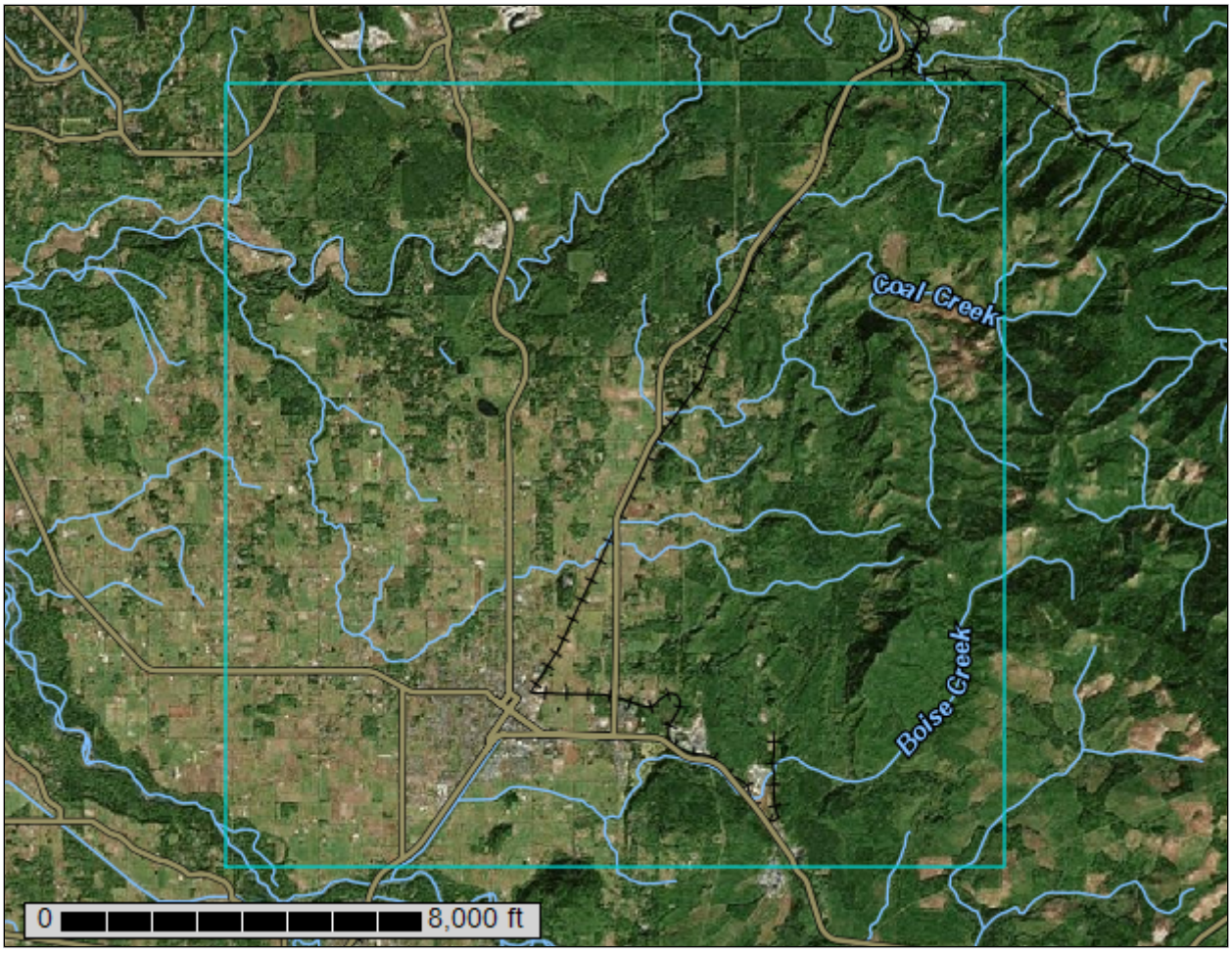
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for King County Area, Washington, Pierce County Area, Washington, and Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)



July 31, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

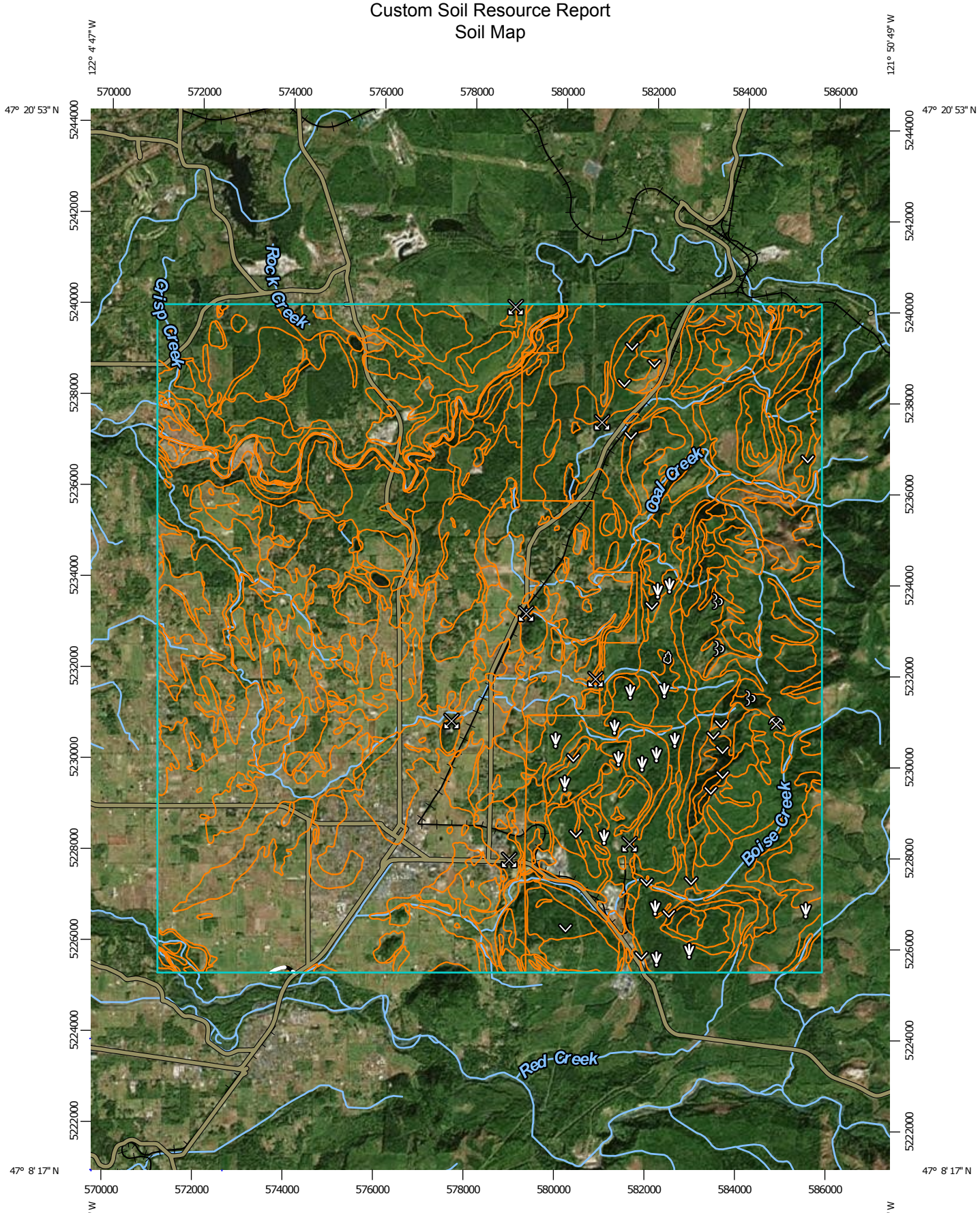
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 11, Sep 14, 2015

Soil Survey Area: Pierce County Area, Washington
Survey Area Data: Version 10, Sep 15, 2015

Soil Survey Area: Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)
Survey Area Data: Version 14, Sep 14, 2015

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2010—Jul 15, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

King County Area, Washington (WA633)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AgB	Alderwood gravelly sandy loam, 0 to 8 percent slopes	4,411.2	8.3%
AgC	Alderwood gravelly sandy loam, 8 to 15 percent slopes	4,568.3	8.6%
AgD	Alderwood gravelly sandy loam, 15 to 30 percent slopes	500.7	0.9%
AkF	Alderwood and Kitsap soils, very steep	1,737.2	3.3%
BeC	Beausite gravelly sandy loam, 6 to 15 percent slopes	674.6	1.3%
BeD	Beausite gravelly sandy loam, 15 to 30 percent slopes	577.8	1.1%
BeF	Beausite gravelly sandy loam, 40 to 75 percent slopes	706.0	1.3%
Bh	Bellingham silt loam	222.1	0.4%
Br	Briscot silt loam	104.8	0.2%
Bu	Buckley gravelly silt loam, 0 to 3 percent slopes	8,502.5	15.9%
EvB	Everett very gravelly sandy loam, 0 to 8 percent slopes	113.2	0.2%
EvC	Everett very gravelly sandy loam, 8 to 15 percent slopes	4,718.9	8.8%
EvD	Everett very gravelly sandy loam, 15 to 30 percent slopes	756.8	1.4%
InA	Indianola loamy sand, 0 to 5 percent slopes	39.4	0.1%
InC	Indianola loamy sand, 5 to 15 percent slopes	155.1	0.3%
KpB	Kitsap silt loam, 2 to 8 percent slopes	213.4	0.4%
Ma	Mixed alluvial land	19.8	0.0%
NeC	Neilton very gravelly loamy sand, 2 to 15 percent slopes	9.0	0.0%
Ng	Newberg silt loam	17.6	0.0%
No	Norma sandy loam	65.3	0.1%
Os	Oridia silt loam	19.5	0.0%
OvD	Ovall gravelly loam, 15 to 25 percent slopes	3.4	0.0%
OvF	Ovall gravelly loam, 40 to 75 percent slopes	299.6	0.6%
Pc	Pilchuck loamy fine sand	115.4	0.2%
PITS	Pits	29.4	0.1%

King County Area, Washington (WA633)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Pu	Puget silty clay loam	48.3	0.1%
Py	Puyallup fine sandy loam	642.9	1.2%
RaC	Ragnar fine sandy loam, 6 to 15 percent slopes	411.7	0.8%
RdC	Ragnar-Indianola association, sloping	306.5	0.6%
Rh	Riverwash	96.5	0.2%
Sh	Sammamish silt loam	22.1	0.0%
Sk	Seattle muck	349.4	0.7%
Sm	Shalcar muck	848.3	1.6%
So	Snohomish silt loam	12.9	0.0%
Su	Sultan silt loam	206.0	0.4%
Tu	Tukwila muck	62.6	0.1%
W	Water	272.2	0.5%
Subtotals for Soil Survey Area		**31,860.3**	**59.6%**
Totals for Area of Interest		**53,413.8**	**100.0%**

Pierce County Area, Washington (WA653)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
2A	Aquic Xerofluvents, level	12.5	0.0%
18C	Indianola loamy sand, 5 to 15 percent slopes	7.8	0.0%
29A	Pilchuck fine sand	0.5	0.0%
47F	Xerochrepts, 45 to 70 percent slopes	9.8	0.0%
W	Water	4.2	0.0%
Subtotals for Soil Survey Area		**34.8**	**0.1%**
Totals for Area of Interest		**53,413.8**	**100.0%**

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
1	Alderwood gravelly loam, 0 to 15 percent slopes	41.0	0.1%
2	Alderwood gravelly loam, 15 to 30 percent slopes	2.5	0.0%
9	Arents, 0 to 8 percent slopes	159.7	0.3%
10	Barneston gravelly ashy coarse sandy loam, 0 to 8 percent slopes	1,615.3	3.0%
11	Barneston gravelly ashy coarse sandy loam, 8 to 15 percent slopes	3,720.8	7.0%

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
12	Barneston gravelly ashy coarse sandy loam, 30 to 65 percent slopes	267.0	0.5%
17	Beausite gravelly loam, 6 to 30 percent slopes	123.0	0.2%
18	Beausite gravelly loam, 30 to 65 percent slopes	612.2	1.1%
39	Christoff sandy loam, 6 to 30 percent slopes	540.5	1.0%
40	Christoff sandy loam, 30 to 65 percent slopes	63.9	0.1%
41	Chuckanut gravelly ashy sandy loam, 5 to 15 percent slopes	138.8	0.3%
42	Chuckanut gravelly ashy sandy loam, 15 to 30 percent slopes	1,072.7	2.0%
43	Chuckanut gravelly ashy sandy loam, 30 to 65 percent slopes	682.3	1.3%
53	Edgewick silt loam, 0 to 3 percent slopes	81.2	0.2%
54	Elwell silt loam, 6 to 30 percent slopes	358.0	0.7%
79	Humaquepts, 0 to 5 percent slopes	125.6	0.2%
84	Jonas gravelly loam, tuff substratum, 15 to 30 percent slopes	93.3	0.2%
86	Jonas gravelly silt loam, 15 to 30 percent slopes	127.8	0.2%
95	Kaleetan sandy loam, tuff substratum, 30 to 65 percent slopes	3.9	0.0%
96	Kanaskat gravelly sandy loam, 0 to 30 percent slopes	1,099.7	2.1%
97	Kanaskat gravelly sandy loam, 30 to 65 percent slopes	1,496.2	2.8%
106	Klaber silt loam, 0 to 8 percent slopes	71.1	0.1%
119	Lemolo silt loam, 0 to 8 percent slopes	106.2	0.2%
120	Littlejohn gravelly sandy loam, 8 to 30 percent slopes	29.0	0.1%
121	Littlejohn gravelly sandy loam, 30 to 65 percent slopes	972.3	1.8%
124	Littlejohn gravelly sandy loam, tuff substratum, 30 to 65 percent slopes	302.5	0.6%
126	Littlejohn-Rock outcrop complex, 30 to 90 percent slopes	166.6	0.3%

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
132	Mashel silt loam, 5 to 30 percent slopes	418.5	0.8%
142	Nagrom sandy loam, 30 to 65 percent slopes	112.9	0.2%
144	Nagrom gravelly loam, tuff substratum, 30 to 65 percent slopes	74.9	0.1%
150	Neilton gravelly loamy sand, 2 to 15 percent slopes	5.3	0.0%
158	Norma loam, 0 to 3 percent slopes	77.2	0.1%
163	Ogarty gravelly loam, 30 to 65 percent slopes	523.5	1.0%
172	Ovall gravelly loam, 15 to 30 percent slopes	313.5	0.6%
173	Ovall gravelly loam, 30 to 65 percent slopes	68.6	0.1%
174	Pastik loam, 0 to 30 percent slopes	5.5	0.0%
188	Pitcher sandy loam, 8 to 30 percent slopes	118.4	0.2%
189	Pitcher sandy loam, 30 to 65 percent slopes	959.3	1.8%
191	Pitcher sandy loam, tuff substratum, 8 to 30 percent slopes	447.9	0.8%
192	Pitcher sandy loam, tuff substratum, 30 to 65 percent slopes	2,259.2	4.2%
195	Pits	42.7	0.1%
196	Playco loamy sand, 8 to 30 percent slopes	0.7	0.0%
197	Playco loamy sand, 30 to 65 percent slopes	31.8	0.1%
199	Playco very gravelly loamy sand, tuff substratum, 8 to 30 percent slopes	20.1	0.0%
200	Playco very gravelly loamy sand, tuff substratum, 30 to 65 percent slopes	88.2	0.2%
203	Ragnar loam, 6 to 15 percent slopes	19.0	0.0%
206	Ragnar-Lynnwood complex, 30 to 45 percent slopes	18.2	0.0%
216	Rober loam, 0 to 30 percent slopes	7.8	0.0%
218	Rock outcrop	5.0	0.0%
228	Scamman silt loam, 6 to 15 percent slopes	73.8	0.1%

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
231	Seattle muck, 0 to 1 percent slopes	2.5	0.0%
235	Shalcar muck, 0 to 1 percent slopes	176.4	0.3%
247	Sulsavar loam, 0 to 8 percent slopes	47.7	0.1%
264	Typic Haplorthods, 35 to 100 percent slopes	68.8	0.1%
265	Typic Udifluvents, 0 to 3 percent slopes	3.3	0.0%
267	Udifluvents, moist, 0 to 8 percent slopes	17.6	0.0%
278	Winston loam, 0 to 8 percent slopes	621.0	1.2%
279	Winston loam, 8 to 30 percent slopes	508.0	1.0%
282	Zynbar loam, 6 to 30 percent slopes	118.7	0.2%
283	Zynbar loam, 30 to 65 percent slopes	77.6	0.1%
285	Water	112.1	0.2%
Subtotals for Soil Survey Area		**21,518.7**	**40.3%**
Totals for Area of Interest		**53,413.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally

are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

King County Area, Washington

AgB—Alderwood gravelly sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t625
Elevation: 50 to 800 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Alderwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly sandy loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)

Minor Components

Mckenna

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

Everett

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

AgC—Alderwood gravelly sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t626
Elevation: 50 to 800 feet
Mean annual precipitation: 20 to 60 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Alderwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly sandy loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XS301WA), Limited Depth Soils (G002XF303WA)

Minor Components

Everett

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, base slope
Down-slope shape: Convex
Across-slope shape: Convex

Indianola

Percent of map unit: 5 percent
Landform: Eskers, kames, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

AgD—Alderwood gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t627
Elevation: 0 to 1,000 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Alderwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly sandy loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)

Minor Components

Everett

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Indianola

Percent of map unit: 5 percent
Landform: Kames, terraces, eskers
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Norma

Percent of map unit: 2 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave

AkF—Alderwood and Kitsap soils, very steep

Map Unit Setting

National map unit symbol: 1hmsn
Elevation: 50 to 800 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Alderwood and similar soils: 50 percent
Kitsap and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Moraines, till plains
Parent material: Basal till with some volcanic ash

Typical profile

H1 - 0 to 12 inches: gravelly ashy sandy loam
H2 - 12 to 27 inches: very gravelly sandy loam
H3 - 27 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 24 to 40 inches to densic material
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Description of Kitsap

Setting

Landform: Terraces
Parent material: Lacustrine deposits with a minor amount of volcanic ash

Typical profile

H1 - 0 to 5 inches: ashy silt loam
H2 - 5 to 24 inches: ashy silt loam
H3 - 24 to 60 inches: stratified silt to silty clay loam

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

BeC—Beausite gravelly sandy loam, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hmss
Elevation: 0 to 1,500 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Beausite and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beausite

Setting

Parent material: Till over residuum from sandstone

Typical profile

H1 - 0 to 6 inches: gravelly ashy sandy loam
H2 - 6 to 19 inches: gravelly ashy sandy loam
H3 - 19 to 38 inches: very gravelly sandy loam
H4 - 38 to 42 inches: bedrock

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Other vegetative classification: Droughty Soils (G002XF403WA)

Minor Components

Norma

Percent of map unit: 3 percent
Landform: Depressions

Seattle
Percent of map unit: 2 percent
Landform: Depressions

BeD—Beausite gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting
National map unit symbol: 1hmst
Elevation: 0 to 1,500 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition
Beausite and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beausite

Setting
Parent material: Till over residuum from sandstone

Typical profile
H1 - 0 to 6 inches: gravelly ashy sandy loam
H2 - 6 to 19 inches: gravelly ashy sandy loam
H3 - 19 to 38 inches: very gravelly sandy loam
H4 - 38 to 42 inches:

Properties and qualities
Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches; 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Droughty Soils (G002XF403WA)

Minor Components

Norma
Percent of map unit: 3 percent

Landform: Depressions

Seattle
Percent of map unit: 2 percent
Landform: Depressions

BeF—Beausite gravelly sandy loam, 40 to 75 percent slopes

Map Unit Setting
National map unit symbol: 1hmsv
Elevation: 0 to 1,500 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition
Beausite and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beausite

Setting
Parent material: Till over residuum from sandstone

Typical profile
H1 - 0 to 6 inches: gravelly ashy sandy loam
H2 - 6 to 19 inches: gravelly ashy sandy loam
H3 - 19 to 38 inches: very gravelly sandy loam
H4 - 38 to 42 inches:

Properties and qualities
Slope: 40 to 75 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

Bh—Bellingham silt loam

Map Unit Setting

National map unit symbol: 1hmsw
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 150 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Bellingham and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bellingham

Setting

Landform: Depressions, drainageways
Parent material: Alluvium

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Other vegetative classification: Wet Soils (G002XN102WA)

Minor Components

Seattle

Percent of map unit: 5 percent
Landform: Depressions

Alderwood

Percent of map unit: 5 percent

Everett

Percent of map unit: 5 percent

Br—Briscot silt loam

Map Unit Setting

National map unit symbol: 1hmsx
Elevation: 20 to 250 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Briscot and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Briscot

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 60 inches: stratified fine sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)

Minor Components

Puyallup

Percent of map unit: 5 percent

Oridia

Percent of map unit: 3 percent
Landform: Depressions

Renton
Percent of map unit: 2 percent
Landform: Depressions

Puget
Percent of map unit: 1 percent
Landform: Depressions

Woodinville
Percent of map unit: 1 percent
Landform: Depressions

Bu—Buckley gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2rtyp
Elevation: 390 to 820 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Buckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buckley

Setting

Landform: Lahars
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Mudflow deposits

Typical profile

Ap - 0 to 10 inches: gravelly silt loam
A - 10 to 16 inches: gravelly loam
Bg - 16 to 38 inches: gravelly sandy clay loam
Cd - 38 to 60 inches: gravelly sandy clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 20 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Other vegetative classification: Wet Soils (G002XF103WA)

Minor Components

Alderwood

Percent of map unit: 10 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex

Seattle

Percent of map unit: 5 percent
Landform: Glacial drainage channels
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

EvB—Everett very gravelly sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t629
Elevation: 30 to 900 feet
Mean annual precipitation: 35 to 91 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Everett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Everett

Setting

Landform: Kames, moraines, eskers
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: very gravelly sandy loam
Bw - 3 to 24 inches: very gravelly sandy loam
C1 - 24 to 35 inches: very gravelly loamy sand
C2 - 35 to 60 inches: extremely cobbly coarse sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA), Droughty Soils (G002XF403WA), Droughty Soils (G002XS401WA)

Minor Components

Alderwood

Percent of map unit: 10 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex

Indianola

Percent of map unit: 10 percent
Landform: Eskers, kames, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

EvC—Everett very gravelly sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t62b
Elevation: 30 to 900 feet
Mean annual precipitation: 35 to 91 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Everett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Everett

Setting

Landform: Eskers, kames, moraines
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: very gravelly sandy loam
Bw - 3 to 24 inches: very gravelly sandy loam
C1 - 24 to 35 inches: very gravelly loamy sand
C2 - 35 to 60 inches: extremely cobbly coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA), Droughty Soils (G002XS401WA), Droughty Soils (G002XF403WA)

Minor Components

Alderwood

Percent of map unit: 10 percent
Landform: Hills, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talf
Down-slope shape: Convex, linear
Across-slope shape: Convex

Indianola

Percent of map unit: 10 percent
Landform: Eskers, kames, terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

EvD—Everett very gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t62c
Elevation: 30 to 900 feet
Mean annual precipitation: 35 to 91 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Everett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Everett

Setting

Landform: Moraines, eskers, kames
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: very gravelly sandy loam
Bw - 3 to 24 inches: very gravelly sandy loam
C1 - 24 to 35 inches: very gravelly loamy sand
C2 - 35 to 60 inches: extremely cobbly coarse sand

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA), Droughty Soils (G002XS401WA)

Minor Components

Alderwood

Percent of map unit: 10 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex

Indianola

Percent of map unit: 10 percent
Landform: Eskers, kames, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear

InA—Indianola loamy sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t62k
Elevation: 0 to 980 feet
Mean annual precipitation: 30 to 81 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Indianola and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Indianola

Setting

Landform: Terraces, eskers, kames
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 6 inches: loamy sand
Bw1 - 6 to 17 inches: loamy sand
Bw2 - 17 to 27 inches: sand
BC - 27 to 37 inches: sand
C - 37 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XV402WA), Droughty Soils (G002XF403WA), Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)

Minor Components

Alderwood

Percent of map unit: 8 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex

Everett

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

InC—Indianola loamy sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t635
Elevation: 0 to 980 feet
Mean annual precipitation: 30 to 81 inches

Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Indianola and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Indianola

Setting

Landform: Terraces, eskers, kames
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 6 inches: loamy sand
Bw1 - 6 to 17 inches: loamy sand
Bw2 - 17 to 27 inches: sand
BC - 27 to 37 inches: sand
C - 37 to 60 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA), Droughty Soils (G002XS401WA)

Minor Components

Alderwood

Percent of map unit: 8 percent
Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex

Everett

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines

Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, base slope
Down-slope shape: Convex
Across-slope shape: Convex

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

KpB—Kitsap silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1hmt9
Mean annual precipitation: 37 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 160 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Kitsap and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kitsap

Setting

Landform: Terraces
Parent material: Lacustrine deposits with a minor amount of volcanic ash

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silt loam
H3 - 24 to 60 inches: stratified silt to silty clay loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C
Other vegetative classification: Soils with Few Limitations (G002XN502WA)

Minor Components

Alderwood
Percent of map unit: 10 percent

Bellingham
Percent of map unit: 3 percent
Landform: Depressions

Tukwila
Percent of map unit: 1 percent
Landform: Depressions

Seattle
Percent of map unit: 1 percent
Landform: Depressions

Ma—Mixed alluvial land

Map Unit Setting
National map unit symbol: 1hmtf
Mean annual precipitation: 25 to 90 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Alluvial land, mixed, and similar soils: 99 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alluvial Land, Mixed

Typical profile
H1 - 0 to 8 inches: sand
H2 - 8 to 20 inches: fine sand
H3 - 20 to 60 inches: sand
H4 - 60 to 70 inches: loamy fine sand, gravelly sand
H4 - 60 to 70 inches:

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A

NeC—Neilton very gravelly loamy sand, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hmtg
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 145 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Neilton and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Neilton

Setting

Landform: Terraces
Parent material: Glacial outwash

Typical profile

H1 - 0 to 6 inches: very gravelly loamy sand
H2 - 6 to 18 inches: very gravelly loamy sand
H3 - 18 to 60 inches: very gravelly sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA)

Minor Components

Norma

Percent of map unit: 1 percent
Landform: Depressions

Seattle

Percent of map unit: 1 percent
Landform: Depressions

Ng—Newberg silt loam

Map Unit Setting

National map unit symbol: 1hmth
Elevation: 30 to 3,000 feet
Mean annual precipitation: 18 to 60 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 150 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Newberg and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newberg

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 36 to 48 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Other vegetative classification: Soils with Few Limitations (G002XN502WA)

Minor Components

Puget

Percent of map unit: 10 percent
Landform: Depressions

Briscot
Percent of map unit: 5 percent
Landform: Depressions

Oridia
Percent of map unit: 5 percent
Landform: Depressions

Woodinville
Percent of map unit: 5 percent
Landform: Depressions

No—Norma sandy loam

Map Unit Setting

National map unit symbol: 1hmtk
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Norma and similar soils: 90 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Norma

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: ashy sandy loam
H2 - 10 to 30 inches: sandy loam
H3 - 30 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D
Other vegetative classification: Wet Soils (G002XN102WA)

Minor Components

Seattle
Percent of map unit: 2 percent
Landform: Depressions

Tukwila
Percent of map unit: 2 percent
Landform: Depressions

Shalcar
Percent of map unit: 1 percent
Landform: Depressions

Norma
Percent of map unit: 1 percent
Landform: Depressions

Alderwood
Percent of map unit: 1 percent

Os—Oridia silt loam

Map Unit Setting
National map unit symbol: 1hmtm
Elevation: 20 to 500 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Oridia and similar soils: 88 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oridia

Setting
Landform: Flood plains
Parent material: Alluvium

Typical profile
H1 - 0 to 9 inches: silt loam
H2 - 9 to 42 inches: silt loam
H3 - 42 to 60 inches: silty clay loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: High (about 12.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)

Minor Components

Puget
Percent of map unit: 5 percent
Landform: Depressions

Woodinville
Percent of map unit: 5 percent
Landform: Depressions

OvD—Ovall gravelly loam, 15 to 25 percent slopes

Map Unit Setting
National map unit symbol: 1hmtp
Elevation: 500 to 1,800 feet
Mean annual precipitation: 45 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Ovall and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ovall

Setting
Landform: Mountain slopes
Parent material: Glacial drift over residuum with volcanic ash in the upper part

Typical profile
H1 - 0 to 11 inches: gravelly ashy loam
H2 - 11 to 36 inches: very gravelly loam
H3 - 36 to 40 inches:

Properties and qualities
Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Droughty Soils (G002XF403WA)

OvF—Ovall gravelly loam, 40 to 75 percent slopes

Map Unit Setting
National map unit symbol: 1hmtq
Elevation: 500 to 1,800 feet
Mean annual precipitation: 45 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Ovall and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ovall

Setting
Landform: Mountain slopes
Parent material: Glacial drift over residuum with volcanic ash in the upper part

Typical profile
H1 - 0 to 11 inches: gravelly ashy loam
H2 - 11 to 36 inches: very gravelly loam
H3 - 36 to 40 inches:

Properties and qualities
Slope: 40 to 75 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

Pc—Pilchuck loamy fine sand

Map Unit Setting

National map unit symbol: 1hmtr
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Pilchuck and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pilchuck

Setting

Landform: Flood plains, terraces
Parent material: Gravelly and sandy alluvium

Typical profile

H1 - 0 to 20 inches: loamy fine sand
H2 - 20 to 38 inches: loamy fine sand
H3 - 38 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA)

Minor Components

Oridia

Percent of map unit: 5 percent
Landform: Depressions

Briscot

Percent of map unit: 5 percent
Landform: Flood plains

PITS—Pits

Map Unit Composition

Pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Pu—Puget silty clay loam

Map Unit Setting

National map unit symbol: 1hmtt
Elevation: 10 to 650 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 180 to 200 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Puget and similar soils: 88 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Puget

Setting

Landform: Flood plains
Parent material: Recent alluvium

Typical profile

H1 - 0 to 7 inches: silty clay loam
H2 - 7 to 45 inches: silty clay loam
H3 - 45 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent

Frequency of ponding: Frequent
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Other vegetative classification: Wet Soils (G002XN102WA)

Minor Components

Woodinville

Percent of map unit: 5 percent
Landform: Depressions

Snohomish

Percent of map unit: 5 percent
Landform: Depressions

Py—Puyallup fine sandy loam

Map Unit Setting

National map unit symbol: 1hmtv
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 170 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Puyallup and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Puyallup

Setting

Landform: Terraces, flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: ashy fine sandy loam
H2 - 8 to 34 inches: very fine sandy loam
H3 - 34 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 48 to 60 inches
Frequency of flooding: Occasional

Frequency of ponding: None
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA)

Minor Components

Briscot

Percent of map unit: 8 percent
Landform: Depressions

Newberg

Percent of map unit: 6 percent
Landform: Depressions

Woodinville

Percent of map unit: 5 percent
Landform: Depressions

Nooksack

Percent of map unit: 3 percent

Oridia

Percent of map unit: 3 percent
Landform: Depressions

RaC—Ragnar fine sandy loam, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hmtw
Elevation: 300 to 1,000 feet
Mean annual precipitation: 35 to 65 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 150 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ragnar and similar soils: 98 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ragnar

Setting

Landform: Kames, terraces, eskers
Parent material: Glacial outwash

Typical profile

H1 - 0 to 4 inches: ashy fine sandy loam
H2 - 4 to 27 inches: ashy fine sandy loam

H3 - 27 to 60 inches: loamy sand

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XF403WA)

RdC—Ragnar-Indianola association, sloping

Map Unit Setting

National map unit symbol: 1hmty
Elevation: 300 to 1,000 feet
Mean annual precipitation: 30 to 65 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 150 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ragnar and similar soils: 45 percent
Indianola and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ragnar

Setting

Landform: Kames, terraces, eskers
Parent material: Glacial outwash

Typical profile

H1 - 0 to 4 inches: ashy fine sandy loam
H2 - 4 to 27 inches: ashy fine sandy loam
H3 - 27 to 60 inches: loamy sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA)

Description of Indianola

Setting
Landform: Terraces
Parent material: Glacial drift

Typical profile
H1 - 0 to 6 inches: loamy fine sand
H2 - 6 to 30 inches: loamy fine sand
H3 - 30 to 60 inches: sand

Properties and qualities
Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA)

Rh—Riverwash

Map Unit Composition
Riverwash: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting
Landform: Drainageways
Parent material: Alluvium

Typical profile
H1 - 0 to 60 inches: Error

Properties and qualities
Slope: 0 to 3 percent

Depth to water table: About 0 to 24 inches
Frequency of flooding: Frequent

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Sh—Sammamish silt loam

Map Unit Setting
National map unit symbol: 1hmv3
Elevation: 0 to 50 feet
Mean annual precipitation: 45 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Sammamish and similar soils: 80 percent
Minor components: 16 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sammamish

Setting
Landform: Flood plains
Parent material: Alluvium

Typical profile
H1 - 0 to 12 inches: silt loam
H2 - 12 to 60 inches: stratified loamy sand to silt loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: High (about 11.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)

Minor Components

Bellingham
Percent of map unit: 10 percent
Landform: Depressions

Puget
Percent of map unit: 5 percent
Landform: Depressions

Puyallup
Percent of map unit: 1 percent

Sk—Seattle muck

Map Unit Setting
National map unit symbol: 1hmv4
Elevation: 0 to 1,000 feet
Mean annual precipitation: 25 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 250 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Seattle and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Seattle

Setting
Landform: Depressions
Parent material: Grassy organic material

Typical profile
H1 - 0 to 11 inches: muck
H2 - 11 to 60 inches: stratified mucky peat to muck

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 23.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Other vegetative classification: Wet Soils (G002XN102WA)

Minor Components

Tukwila
Percent of map unit: 10 percent
Landform: Depressions

Shalcar
Percent of map unit: 10 percent
Landform: Depressions

Bellingham
Percent of map unit: 3 percent
Landform: Depressions

Norma
Percent of map unit: 2 percent
Landform: Depressions

Sm—Shalcar muck

Map Unit Setting
National map unit symbol: 1hmv5
Elevation: 50 to 700 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Shalcar and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shalcar

Setting
Landform: Flood plains
Parent material: Herbaceous organic material and/or alluvium

Typical profile
H1 - 0 to 14 inches: muck
H2 - 14 to 28 inches: fine sandy loam
H3 - 28 to 60 inches: loamy sand

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches

Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Other vegetative classification: Wet Soils (G002XF103WA)

Minor Components

Tukwila

Percent of map unit: 5 percent
Landform: Depressions

Seattle

Percent of map unit: 5 percent
Landform: Depressions

Norma

Percent of map unit: 5 percent
Landform: Depressions

Puget

Percent of map unit: 5 percent
Landform: Depressions

Snohomish

Percent of map unit: 5 percent
Landform: Depressions

So—Snohomish silt loam

Map Unit Setting

National map unit symbol: 1hmv7
Elevation: 10 to 300 feet
Mean annual precipitation: 22 to 50 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Snohomish and similar soils: 70 percent
Minor components: 16 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Snohomish

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 17 inches: clay loam
H3 - 17 to 27 inches: mucky peat
H4 - 27 to 60 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Other vegetative classification: Wet Soils (G002XN102WA)

Minor Components

Woodinville

Percent of map unit: 10 percent
Landform: Flood plains

Seattle

Percent of map unit: 2 percent
Landform: Depressions

Tukwila

Percent of map unit: 2 percent
Landform: Flood plains

Shalcar

Percent of map unit: 1 percent
Landform: Flood plains

Sultan

Percent of map unit: 1 percent

Su—Sultan silt loam

Map Unit Setting

National map unit symbol: 1hmv9
Elevation: 0 to 150 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 150 to 200 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Sultan and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sultan

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 9 inches: ashy silt loam
H2 - 9 to 48 inches: silty clay loam
H3 - 48 to 60 inches: stratified sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)

Minor Components

Puget

Percent of map unit: 10 percent
Landform: Flood plains

Sammamish

Percent of map unit: 10 percent
Landform: Flood plains

Oridia

Percent of map unit: 10 percent
Landform: Flood plains

Tu—Tukwila muck

Map Unit Setting

National map unit symbol: 1hmvb
Elevation: 30 to 750 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tukwila and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tukwila

Setting

Landform: Flood plains
Parent material: Herbaceous organic material

Typical profile

H1 - 0 to 19 inches: muck
H2 - 19 to 60 inches: stratified diatomaceous earth to muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 24.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Other vegetative classification: Wet Soils (G002XN102WA)

Minor Components

Seattle

Percent of map unit: 15 percent
Landform: Depressions

Bellingham

Percent of map unit: 3 percent
Landform: Depressions

Norma

Percent of map unit: 2 percent
Landform: Depressions

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Pierce County Area, Washington

2A—Aquic Xerofluvents, level

Map Unit Setting

National map unit symbol: 2hq7
Mean annual precipitation: 25 to 90 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Aquic xerofluvents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aquic Xerofluvents

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 32 inches: fine sandy loam
H3 - 32 to 60 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D

18C—Indianola loamy sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t635
Elevation: 0 to 980 feet
Mean annual precipitation: 30 to 81 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 170 to 210 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Indianola and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Indianola

Setting

Landform: Terraces, kames, eskers
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 6 inches: loamy sand
Bw1 - 6 to 17 inches: loamy sand
Bw2 - 17 to 27 inches: sand
BC - 27 to 37 inches: sand
C - 37 to 60 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA), Droughty Soils (G002XS401WA)

Minor Components

Alderwood

Percent of map unit: 8 percent
Landform: Hills, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talf
Down-slope shape: Convex, linear
Across-slope shape: Convex

Everett

Percent of map unit: 5 percent
Landform: Moraines, kames, eskers
Landform position (two-dimensional): Footslope, shoulder
Landform position (three-dimensional): Base slope, crest

Down-slope shape: Convex
Across-slope shape: Convex

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

29A—Pilchuck fine sand

Map Unit Setting

National map unit symbol: 2hq6
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Pilchuck and similar soils: 85 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pilchuck

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 36 inches: fine sand
H3 - 36 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A

Other vegetative classification: Droughty Soils (G002XN402WA)

Minor Components

Aquic xerofluvents
Percent of map unit: 10 percent
Landform: Flood plains

47F—Xerochrepts, 45 to 70 percent slopes

Map Unit Setting
National map unit symbol: 2hr5
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Farmland classification: Not prime farmland

Map Unit Composition
Xerochrepts and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerochrepts

Setting
Landform: Valley sides
Parent material: Sandy and gravelly outwash and/or glacial till

Typical profile
H1 - 0 to 6 inches: gravelly sandy loam
H2 - 6 to 40 inches: gravelly sandy loam
H3 - 40 to 60 inches: very gravelly sandy loam

Properties and qualities
Slope: 45 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Coastal beaches
Percent of map unit:
Landform: Alluvial cones

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)

1—Alderwood gravelly loam, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t62h
Elevation: 50 to 800 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Alderwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Other vegetative classification: Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XN302WA)

Minor Components

Mckenna

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave

Everett

Percent of map unit: 5 percent
Landform: Moraines, eskers, kames
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, base slope
Down-slope shape: Convex
Across-slope shape: Convex

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

2—Alderwood gravelly loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t62j
Elevation: 50 to 800 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Alderwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alderwood

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Limited Depth Soils (G002XF303WA)

Minor Components

Mckenna

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

Everett

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Shalcar

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Norma

Percent of map unit: 2 percent

Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave

9—Arents, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2h5g
Mean annual precipitation: 40 to 80 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 90 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Arents and similar soils: 85 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents

Setting

Landform: Terraces, plains
Parent material: Volcanic ash and glacial drift

Typical profile

H1 - 0 to 35 inches: gravelly sandy loam
H2 - 35 to 60 inches: stratified extremely gravelly coarse sand to gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A

Minor Components

Norma

Percent of map unit: 1 percent
Landform: Depressions

10—Barneston gravelly ashy coarse sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w173
Elevation: 80 to 1,800 feet
Mean annual precipitation: 47 to 87 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Barneston, coarse sandy loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Barneston, Coarse Sandy Loam

Setting

Landform: Eskers, kames, moraines
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with loess over sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: gravelly ashy coarse sandy loam
Bw1 - 3 to 6 inches: very gravelly ashy coarse sandy loam
Bw2 - 6 to 19 inches: very gravelly ashy coarse sandy loam
2C - 19 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (3.54 to 21.26 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XF403WA), Droughty Soils (G003XF403WA)

Minor Components

Norma

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

Nargar

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Birdsview

Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear

11—Barneston gravelly ashy coarse sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w174
Elevation: 80 to 1,480 feet
Mean annual precipitation: 39 to 79 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Barneston, coarse sandy loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Barneston, Coarse Sandy Loam

Setting

Landform: Eskers, kames, moraines
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with loess over sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: gravelly ashy coarse sandy loam
Bw1 - 3 to 6 inches: very gravelly ashy coarse sandy loam
Bw2 - 6 to 19 inches: very gravelly ashy coarse sandy loam
2C - 19 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (3.54 to 21.26 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XS401WA), Droughty Soils (G003XF403WA)

Minor Components

Norma

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave

Nargar

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

Birdsview

Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Footslope, backslope, toeslope
Landform position (three-dimensional): Base slope, side slope, tread
Down-slope shape: Convex
Across-slope shape: Linear

12—Barneston gravelly ashy coarse sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2w176
Elevation: 80 to 1,640 feet
Mean annual precipitation: 39 to 94 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Barneston, coarse sandy loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Barneston, Coarse Sandy Loam

Setting

Landform: Eskers, kames, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with loess over sandy and gravelly glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: gravelly ashy coarse sandy loam
Bw1 - 3 to 6 inches: very gravelly ashy coarse sandy loam
Bw2 - 6 to 19 inches: very gravelly ashy coarse sandy loam
2C - 19 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (3.54 to 21.26 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Norma

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave

Nargar

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

Birdsview

Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Convex
Across-slope shape: Linear

17—Beausite gravelly loam, 6 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gz5
Elevation: 0 to 1,500 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Beausite and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beausite

Setting

Landform: Hills
Parent material: Glacial till and colluvium derived from sandstone

Typical profile

H1 - 0 to 5 inches: gravelly loam
H2 - 5 to 11 inches: very gravelly loam
H3 - 11 to 36 inches: extremely gravelly sandy loam
H4 - 36 to 46 inches: unweathered bedrock

Properties and qualities

Slope: 6 to 30 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Droughty Soils (G003XF403WA)

18—Beausite gravelly loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gzj
Elevation: 0 to 1,500 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Beausite and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beausite

Setting

Landform: Hills
Parent material: Glacial till and colluvium derived from sandstone

Typical profile

H1 - 0 to 5 inches: gravelly loam
H2 - 5 to 11 inches: very gravelly sandy loam
H3 - 11 to 36 inches: extremely gravelly sandy loam
H4 - 36 to 46 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 24 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

39—Christoff sandy loam, 6 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h3n
Mean annual precipitation: 70 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Christoff and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Christoff

Setting

Landform: Mountain slopes, slumps
Parent material: Volcanic ash and cinders over residuum weathered from tuff breccia

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 26 inches: loam
H3 - 26 to 60 inches: clay loam

Properties and qualities

Slope: 6 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

40—Christoff sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2h3q
Mean annual precipitation: 70 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Christoff and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Christoff

Setting

Landform: Mountain slopes, slumps
Parent material: Volcanic ash and cinders over residuum weathered from tuff breccia

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 26 inches: loam
H3 - 26 to 60 inches: clay loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

41—Chuckanut gravelly ashy sandy loam, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2r3l9
Elevation: 390 to 1,870 feet
Mean annual precipitation: 35 to 45 inches

Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Chuckanut and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chuckanut

Setting

Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with colluvium derived from sandstone over dense glacial till

Typical profile

Oi - 0 to 5 inches: slightly decomposed plant material
Oe - 5 to 7 inches: moderately decomposed plant material
E - 7 to 9 inches: gravelly ashy sandy loam
Bs1 - 9 to 16 inches: gravelly ashy loam
Bs2 - 16 to 22 inches: gravelly ashy loam
2BC - 22 to 42 inches: gravelly sandy loam
2C - 42 to 56 inches: gravelly loam
2Cr - 56 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 39 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Other vegetative classification: Soils with Moderate Limitations (G002XF603WA)

Minor Components

Beausite

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex

Bellingham

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Tokul

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex

42—Chuckanut gravelly ashy sandy loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2r3lb
Elevation: 390 to 1,870 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Chuckanut and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chuckanut

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with colluvium derived from sandstone over dense glacial till

Typical profile

Oi - 0 to 5 inches: slightly decomposed plant material
Oe - 5 to 7 inches: moderately decomposed plant material
E - 7 to 9 inches: gravelly ashy sandy loam
Bs1 - 9 to 16 inches: gravelly ashy loam
Bs2 - 16 to 22 inches: gravelly ashy loam
2BC - 22 to 42 inches: gravelly sandy loam
2C - 42 to 56 inches: gravelly loam
2Cr - 56 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 39 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Sloping to Steep Soils (G002XF703WA), Soils with Moderate Limitations (G002XF603WA)

Minor Components

Tokul

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex

Beausite

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex

Bellingham

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Rock outcrop

Percent of map unit: 5 percent

43—Chuckanut gravelly ashy sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2r3lc
Elevation: 390 to 1,870 feet

Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Chuckanut and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chuckanut

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with colluvium derived from sandstone over dense glacial till

Typical profile

Oi - 0 to 5 inches: slightly decomposed plant material
Oe - 5 to 7 inches: moderately decomposed plant material
E - 7 to 9 inches: gravelly ashy sandy loam
Bs1 - 9 to 16 inches: gravelly ashy loam
Bs2 - 16 to 22 inches: gravelly ashy loam
2BC - 22 to 42 inches: gravelly sandy loam
2C - 42 to 56 inches: gravelly loam
2Cr - 56 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 39 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Beausite

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Convex
Across-slope shape: Convex

Bellingham
Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Tokul
Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex

53—Edgewick silt loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 2h45
Elevation: 50 to 500 feet
Mean annual precipitation: 55 to 70 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 130 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Edgewick and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edgewick

Setting
Landform: Terraces
Parent material: Alluvium

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 20 inches: silt loam
H3 - 20 to 46 inches: loamy sand
H4 - 46 to 60 inches: very gravelly sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: About 36 to 48 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Other vegetative classification: Soils with Few Limitations (G002XN502WA)

Minor Components

Oridia

Percent of map unit: 5 percent
Landform: Flood plains

54—Elwell silt loam, 6 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h46
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Elwell and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elwell

Setting

Landform: Mountain slopes, plateaus
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over glacial till

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 35 inches: gravelly silt loam
H3 - 35 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to ortstein
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Limited Depth Soils (G003XF303WA)

79—Humaquepts, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2h52
Elevation: 1,800 to 2,800 feet
Mean annual precipitation: 70 to 90 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Humaquepts and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Humaquepts

Setting

Landform: Depressions, terraces
Parent material: Alluvium

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 13 inches: silt loam
H3 - 13 to 25 inches: gravelly silty clay loam
H4 - 25 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D

84—Jonas gravelly loam, tuff substratum, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h58
Elevation: 1,800 to 2,800 feet
Mean annual precipitation: 60 to 90 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Jonas and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jonas

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice mixed with colluvium and residuum derived from tuff breccia

Typical profile

H1 - 0 to 6 inches: gravelly loam
H2 - 6 to 43 inches: gravelly loam
H3 - 43 to 54 inches: very gravelly loam
H4 - 54 to 64 inches: weathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

86—Jonas gravelly silt loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h5b
Elevation: 1,800 to 2,800 feet
Mean annual precipitation: 60 to 90 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 140 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Jonas and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jonas

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice mixed with colluvium and residuum derived from andesite

Typical profile

H1 - 0 to 16 inches: gravelly silt loam
H2 - 16 to 60 inches: gravelly clay loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Sloping to Steep Soils (G003XF703WA)

95—Kaleetan sandy loam, tuff substratum, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2h5n

Elevation: 1,600 to 2,800 feet
Mean annual precipitation: 90 to 130 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Kaleetan and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kaleetan

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium derived from tuff breccia and till

Typical profile
H1 - 0 to 6 inches: sandy loam
H2 - 6 to 17 inches: gravelly sandy loam
H3 - 17 to 34 inches: very gravelly loam
H4 - 34 to 60 inches: extremely gravelly sandy loam

Properties and qualities
Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

96—Kanaskat gravelly sandy loam, 0 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2h5p
Elevation: 1,000 to 1,700 feet
Mean annual precipitation: 50 to 80 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Kanaskat and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kanaskat

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and colluvium derived from igneous rock

Typical profile

H1 - 0 to 11 inches: gravelly sandy loam
H2 - 11 to 23 inches: extremely gravelly loam
H3 - 23 to 38 inches: very gravelly sandy loam
H4 - 38 to 60 inches: extremely gravelly coarse sandy loam
H5 - 60 to 70 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: 60 to 72 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Droughty Soils (G003XF403WA)

97—Kanaskat gravelly sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2h5q
Elevation: 1,000 to 1,700 feet
Mean annual precipitation: 50 to 80 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Kanaskat and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kanaskat

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and colluvium derived from igneous rock

Typical profile

H1 - 0 to 11 inches: gravelly sandy loam
H2 - 11 to 23 inches: extremely gravelly loam
H3 - 23 to 38 inches: very gravelly sandy loam
H4 - 38 to 60 inches: extremely gravelly coarse sandy loam
H5 - 60 to 70 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 60 to 72 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

106—Klaber silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2gwx
Mean annual precipitation: 40 to 70 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 125 to 200 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Klaber and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Klaber

Setting

Landform: Terraces
Parent material: Lacustrine deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 22 inches: silt loam
H3 - 22 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: High (about 9.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Other vegetative classification: Wet Soils (G003XF103WA)

119—Lemolo silt loam, 0 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2gxc
Mean annual precipitation: 55 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Lemolo and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lemolo

Setting
Landform: Terraces
Parent material: Oceola mudflow deposits

Typical profile
H1 - 0 to 5 inches: silt loam
H2 - 5 to 17 inches: loam
H3 - 17 to 60 inches: very gravelly sandy clay loam

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Other vegetative classification: Wet Soils (G002XF103WA)

Minor Components

Larrupin

Percent of map unit:

120—Littlejohn gravelly sandy loam, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gxf
Elevation: 1,700 to 2,800 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 150 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Littlejohn and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Littlejohn

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium and residuum derived from extrusive igneous rock

Typical profile

H1 - 0 to 11 inches: gravelly sandy loam
H2 - 11 to 17 inches: very gravelly loam
H3 - 17 to 30 inches: very gravelly loam
H4 - 30 to 40 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: 25 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C

121—Littlejohn gravelly sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gxg
Elevation: 1,700 to 2,800 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 150 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Littlejohn and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Littlejohn

Setting

Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium and residuum derived from extrusive igneous rock

Typical profile

H1 - 0 to 11 inches: gravelly sandy loam
H2 - 11 to 17 inches: very gravelly loam
H3 - 17 to 30 inches: very gravelly loam
H4 - 30 to 40 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 25 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

124—Littlejohn gravelly sandy loam, tuff substratum, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gxk
Elevation: 1,700 to 2,800 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 150 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Littlejohn and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Littlejohn

Setting

Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium and residuum derived from tuff breccia

Typical profile

H1 - 0 to 7 inches: gravelly sandy loam
H2 - 7 to 18 inches: gravelly sandy loam
H3 - 18 to 27 inches: very gravelly sandy loam
H4 - 27 to 37 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 25 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

126—Littlejohn-Rock outcrop complex, 30 to 90 percent slopes

Map Unit Setting

National map unit symbol: 2gxm
Elevation: 1,700 to 2,800 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 150 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Littlejohn and similar soils: 50 percent
Rock outcrop: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Littlejohn

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium and residuum derived from igneous and metamorphic rock; volcanic ash and pumice over colluvium and residuum derived from extrusive igneous rock

Typical profile

H1 - 0 to 11 inches: gravelly sandy loam
H2 - 11 to 30 inches: very gravelly loam
H3 - 30 to 40 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 90 percent
Depth to restrictive feature: 25 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

Description of Rock Outcrop

Properties and qualities

Slope: 30 to 90 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

132—Mashel silt loam, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gxv
Mean annual precipitation: 50 to 60 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 150 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Mashel and similar soils: 85 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mashel

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Parent material: Highly weathered glacial till

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 13 inches: silt loam
H3 - 13 to 60 inches: silty clay

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

Minor Components

Scamman

Percent of map unit: 2 percent

Landform: Terraces

142—Nagrom sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gy6
Elevation: 2,400 to 3,600 feet
Mean annual precipitation: 75 to 100 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 110 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Nagrom and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nagrom

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium derived from igneous rock and residuum weathered from igneous rock

Typical profile

H1 - 0 to 4 inches: sandy loam
H2 - 4 to 7 inches: loam
H3 - 7 to 23 inches: very gravelly loam
H4 - 23 to 38 inches: very gravelly loam
H5 - 38 to 48 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

144—Nagrom gravelly loam, tuff substratum, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gy8
Elevation: 2,400 to 3,600 feet
Mean annual precipitation: 75 to 100 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 110 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Nagrom and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nagrom

Setting

Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium and residuum derived from tuff breccia

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 10 inches: gravelly loam
H3 - 10 to 25 inches: very gravelly loam
H4 - 25 to 34 inches: extremely gravelly silt loam
H5 - 34 to 44 inches: weathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

150—Neilton gravelly loamy sand, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2gyh
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 145 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Neilton and similar soils: 85 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Neilton

Setting

Landform: Terraces
Parent material: Glacial outwash

Typical profile

H1 - 0 to 16 inches: gravelly loamy sand
H2 - 16 to 21 inches: extremely gravelly sand
H3 - 21 to 60 inches: very gravelly sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Other vegetative classification: Droughty Soils (G002XN402WA)

Minor Components

Norma

Percent of map unit: 2 percent
Landform: Depressions

158—Norma loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2gyr
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Norma and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Norma

Setting

Landform: Depressions, drainageways
Parent material: Alluvium

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 33 inches: gravelly loam
H3 - 33 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Other vegetative classification: Wet Soils (G002XF103WA)

Minor Components

Norma, drained

Percent of map unit: 5 percent
Landform: Depressions

Alderwood

Percent of map unit:

163—Ogarty gravelly loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gyy
Elevation: 200 to 1,200 feet
Mean annual precipitation: 50 to 70 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 140 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Ogarty and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ogarty

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and colluvium and residuum derived from andesite and tuff breccia

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 37 inches: extremely gravelly fine sandy loam
H3 - 37 to 47 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

172—Ovall gravelly loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gz8
Elevation: 500 to 1,800 feet
Mean annual precipitation: 45 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ovall and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ovall

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Parent material: Glacial drift and colluvium and residuum derived from andesite

Typical profile

H1 - 0 to 3 inches: gravelly loam
H2 - 3 to 24 inches: very gravelly loam
H3 - 24 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Limited Depth Soils (G002XF303WA)

173—Ovall gravelly loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gz9

Elevation: 500 to 1,800 feet
Mean annual precipitation: 45 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Ovall and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ovall

Setting
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Parent material: Glacial drift and colluvium and residuum derived from andesite

Typical profile
H1 - 0 to 3 inches: gravelly loam
H2 - 3 to 24 inches: very gravelly loam
H3 - 24 to 34 inches: unweathered bedrock

Properties and qualities
Slope: 30 to 65 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

174—Pastik loam, 0 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2gzb
Elevation: 200 to 800 feet
Mean annual precipitation: 45 to 70 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 140 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Pastik and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pastik

Setting

Landform: Terraces
Parent material: Volcanic ash and lacustrine deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 31 inches: silt loam
H3 - 31 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 14.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Soils with Moderate Limitations (G002XN602WA)

188—Pitcher sandy loam, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gzt
Mean annual precipitation: 70 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Pitcher and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pitcher

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over colluvium and residuum derived from andesite

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 16 inches: gravelly sandy loam
H3 - 16 to 29 inches: very gravelly loam

H4 - 29 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Droughty Soils (G003XF403WA)

189—Pitcher sandy loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gzv
Mean annual precipitation: 70 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Pitcher and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pitcher

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over colluvium and residuum derived from andesite

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 16 inches: gravelly sandy loam
H3 - 16 to 29 inches: very gravelly loam
H4 - 29 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: Low (about 6.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

191—Pitcher sandy loam, tuff substratum, 8 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2gzy
Mean annual precipitation: 70 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Pitcher and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pitcher

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over colluvium and residuum derived from tuff breccia

Typical profile
H1 - 0 to 7 inches: sandy loam
H2 - 7 to 13 inches: gravelly sandy loam
H3 - 13 to 29 inches: very gravelly sandy loam
H4 - 29 to 60 inches: extremely gravelly sandy loam

Properties and qualities
Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Droughty Soils (G003XF403WA)

192—Pitcher sandy loam, tuff substratum, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gzz
Mean annual precipitation: 70 inches
Mean annual air temperature: 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Pitcher and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pitcher

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over colluvium and residuum derived from tuff breccia

Typical profile

H1 - 0 to 7 inches: sandy loam
H2 - 7 to 13 inches: gravelly sandy loam
H3 - 13 to 29 inches: very gravelly sandy loam
H4 - 29 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

195—Pits

Map Unit Composition

Pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

196—Playco loamy sand, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h03
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 75 to 90 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 110 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Playco and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Playco

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium derived from andesite

Typical profile

H1 - 0 to 6 inches: loamy sand
H2 - 6 to 10 inches: sandy loam
H3 - 10 to 36 inches: very gravelly loam
H4 - 36 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

197—Playco loamy sand, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2h04
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 75 to 90 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 110 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Playco and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Playco

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium derived from andesite

Typical profile

H1 - 0 to 6 inches: loamy sand
H2 - 6 to 10 inches: sandy loam
H3 - 10 to 36 inches: very gravelly loam
H4 - 36 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

199—Playco very gravelly loamy sand, tuff substratum, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h06
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 75 to 90 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 100 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Playco and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Playco

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium derived from tuff breccia

Typical profile

H1 - 0 to 7 inches: very gravelly loamy sand
H2 - 7 to 17 inches: very gravelly loamy sand
H3 - 17 to 50 inches: extremely gravelly sandy loam
H4 - 50 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

200—Playco very gravelly loamy sand, tuff substratum, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2h09
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 75 to 90 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 100 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Playco and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Playco

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and pumice over colluvium derived from tuff breccia

Typical profile

H1 - 0 to 7 inches: very gravelly loamy sand
H2 - 7 to 17 inches: very gravelly loamy sand
H3 - 17 to 50 inches: extremely gravelly sandy loam
H4 - 50 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

203—Ragnar loam, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2h0d
Elevation: 300 to 1,000 feet
Mean annual precipitation: 35 to 65 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 150 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ragnar and similar soils: 85 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ragnar

Setting

Landform: Outwash terraces
Parent material: Glacial outwash

Typical profile

H1 - 0 to 13 inches: loam
H2 - 13 to 24 inches: sandy loam
H3 - 24 to 60 inches: loamy sand

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

Minor Components

Norma

Percent of map unit: 2 percent
Landform: Depressions

206—Ragnar-Lynnwood complex, 30 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2h0h
Elevation: 50 to 1,000 feet
Mean annual precipitation: 35 to 65 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 150 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Lynnwood and similar soils: 45 percent
Ragnar and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ragnar

Setting

Landform: Escarpments, outwash terraces
Parent material: Glacial outwash

Typical profile

H1 - 0 to 13 inches: loam
H2 - 13 to 24 inches: sandy loam
H3 - 24 to 60 inches: loamy sand

Properties and qualities

Slope: 30 to 45 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Lynnwood

Setting

Landform: Outwash terraces
Parent material: Glacial outwash

Typical profile

H1 - 0 to 6 inches: loamy fine sand
H2 - 6 to 26 inches: loamy fine sand

H3 - 26 to 60 inches: fine sand

Properties and qualities

Slope: 30 to 45 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

216—Rober loam, 0 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2h0v
Elevation: 800 to 2,000 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Rober and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rober

Setting

Landform: Mountain slopes, plateaus
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash and lacustrine deposits

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 30 inches: loam
H3 - 30 to 60 inches: stratified silt loam to silty clay loam

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None

Frequency of ponding: None
Available water storage in profile: High (about 11.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

218—Rock outcrop

Map Unit Composition
Rock outcrop: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Properties and qualities
Slope: 70 to 99 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

228—Scamman silt loam, 6 to 15 percent slopes

Map Unit Setting
National map unit symbol: 2h18
Elevation: 150 to 2,000 feet
Mean annual precipitation: 40 to 70 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Scamman and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scamman

Setting
Landform: Terraces
Parent material: Glaciofluvial deposits and/or glaciolacustrine deposits

Typical profile
H1 - 0 to 6 inches: silt loam
H2 - 6 to 14 inches: silt loam
H3 - 14 to 27 inches: silty clay
H4 - 27 to 60 inches: silty clay

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 5 to 11 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Other vegetative classification: Seasonally Wet Soils (G003XF203WA)

231—Seattle muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2h1d
Elevation: 0 to 1,000 feet
Mean annual precipitation: 25 to 50 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 250 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Seattle and similar soils: 85 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Seattle

Setting

Landform: Depressions, till plains, valleys
Parent material: Herbaceous organic material and woody organic material

Typical profile

H1 - 0 to 8 inches: muck
H2 - 8 to 60 inches: stratified mucky peat to muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Other vegetative classification: Wet Soils (G002XF103WA)

Minor Components

Puget

Percent of map unit: 2 percent
Landform: Flood plains

Shalcar

Percent of map unit: 2 percent
Landform: Depressions

Seattle, drained

Percent of map unit: 2 percent
Landform: Depressions

235—Shalcar muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2h1j
Elevation: 50 to 700 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Shalcar and similar soils: 85 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shalcar

Setting

Landform: Till plains, depressions, outwash terraces
Parent material: Herbaceous and woody organic material over alluvium and glaciofluvial deposits

Typical profile

H1 - 0 to 10 inches: muck
H2 - 10 to 20 inches: muck
H3 - 20 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 17.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Other vegetative classification: Wet Soils (G003XF103WA)

Minor Components

Seattle

Percent of map unit: 2 percent
Landform: Depressions

Woodinville

Percent of map unit: 2 percent
Landform: Flood plains

Shalcar, drained

Percent of map unit: 2 percent
Landform: Depressions

247—Sulsavar loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2h1y
Mean annual precipitation: 45 to 75 inches
Mean annual air temperature: 46 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sulsavar and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sulsavar

Setting

Landform: Alluvial fans, terraces
Parent material: Volcanic ash and alluvium

Typical profile

H1 - 0 to 28 inches: loam
H2 - 28 to 51 inches: stratified gravelly sandy loam to silt loam
H3 - 51 to 60 inches: stratified very gravelly loamy sand to loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Other vegetative classification: Soils with Few Limitations (G003XF503WA)

264—Typic Haplorthods, 35 to 100 percent slopes

Map Unit Setting

National map unit symbol: 2h2k
Mean annual precipitation: 50 to 80 inches
Mean annual air temperature: 46 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Typic haplorthods and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Typic Haplorthods

Setting

Landform: Valley sides, mountainsides
Parent material: Volcanic ash, glacial drift and colluvium

Typical profile

H1 - 0 to 3 inches: very gravelly loam
H2 - 3 to 45 inches: very gravelly loam
H3 - 45 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 35 to 100 percent
Depth to restrictive feature: 20 to 60 inches to densic material
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

265—Typic Udifluvents, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2h2l
Elevation: 1,000 to 2,500 feet
Mean annual precipitation: 40 to 65 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Typic udifluvents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Typic Udifluvents

Setting

Landform: Drainageways, stream terraces
Parent material: Alluvium

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 16 inches: silt loam
H3 - 16 to 60 inches: stratified gravelly coarse sand to fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B

267—Udifluvents, moist, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2h2n
Elevation: 1,300 to 2,500 feet
Mean annual precipitation: 60 to 80 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Udifluvents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udifluvents

Setting

Landform: Stream terraces, drainageways
Parent material: Alluvium

Typical profile

H1 - 0 to 6 inches: gravelly sandy loam
H2 - 6 to 21 inches: very gravelly loamy sand
H3 - 21 to 60 inches: stratified extremely gravelly sandy loam to very gravelly sandy clay loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A

278—Winston loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2h31
Elevation: 150 to 1,900 feet
Mean annual precipitation: 40 to 80 inches

Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 140 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Winston and similar soils: 85 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Winston

Setting
Landform: Terraces, terraces, outwash plains
Parent material: Volcanic ash and glacial outwash

Typical profile
H1 - 0 to 11 inches: loam
H2 - 11 to 21 inches: gravelly loam
H3 - 21 to 34 inches: gravelly fine sandy loam
H4 - 34 to 60 inches: extremely gravelly sand

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Other vegetative classification: Soils with Few Limitations (G003XF503WA)

Minor Components

Shalcar
Percent of map unit: 2 percent
Landform: Depressions

279—Winston loam, 8 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2h32
Elevation: 150 to 1,900 feet
Mean annual precipitation: 40 to 80 inches

Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 140 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Winston and similar soils: 85 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Winston

Setting
Landform: Outwash plains, terraces, terraces
Parent material: Volcanic ash and glacial outwash

Typical profile
H1 - 0 to 11 inches: loam
H2 - 11 to 21 inches: gravelly loam
H3 - 21 to 34 inches: gravelly fine sandy loam
H4 - 34 to 60 inches: extremely gravelly sand

Properties and qualities
Slope: 8 to 30 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

Minor Components

Shalcar
Percent of map unit: 2 percent
Landform: Depressions

282—Zynbar loam, 6 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2h36
Elevation: 1,600 to 3,000 feet
Mean annual precipitation: 70 to 100 inches

Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Zynbar and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zynbar

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over colluvium derived from igneous rock or glacial till

Typical profile
H1 - 0 to 18 inches: loam
H2 - 18 to 41 inches: gravelly silt loam
H3 - 41 to 60 inches: silt loam

Properties and qualities
Slope: 6 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 17.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

283—Zynbar loam, 30 to 65 percent slopes

Map Unit Setting
National map unit symbol: 2h37
Elevation: 1,600 to 3,000 feet
Mean annual precipitation: 70 to 100 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Zynbar and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zynbar

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Parent material: Volcanic ash over colluvium derived from igneous rock or glacial till

Typical profile

H1 - 0 to 18 inches: loam
H2 - 18 to 41 inches: gravelly silt loam
H3 - 41 to 60 inches: silt loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 17.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

285—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Alluvial cones

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